UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/934,773	08/21/2001	Robert E. Reiter	30435.54USD3	9474

26941 7590 08/15/2002

MANDEL & ADRIANO
35 NORTH ARROYO PARKWAY
SUITE 60
PASADENA, CA 91103

EXAMINER	
HELMS, LARRY RONALD	
ART UNIT	PAPER NUMBER
1642	

DATE MAILED: 08/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/934,773	Applicant(s) REITER ET AL.	
	Examiner Larry R. Helms	Art Unit 1642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1, 53-88* is/are pending in the application.

4a) Of the above claim(s) *64-86* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 53-63, 87-88* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *1/9/2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *8* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *See Continuation Sheet* .

Continuation of Attachment(s) 6). Other: notice to comply with sequences.

DETAILED ACTION

Election/Restriction

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1, 53-63, 87, 88 drawn to an antibody, compositions comprising such and kit comprising the antibody , classified in class 530, subclass 388.85.

   II. Claims 64-72, drawn to a method of detecting PSCA, classified in class 435, subclass 7.1

   III. Claim 73, drawn to a method of monitoring the course of a cancer, classified in class 435, subclass 7.1.

   IV. Claims 74-80, drawn to a method of diagnosing a cancer, classified in class 435, subclass 7.23.

   V. Claim 81, drawn to a method of inhibiting a cell, classified in class 424, subclass 178.1.

   VI. Claim 82-86, drawn to a method of inhibiting the growth of a tumor cell, classified in class 424, subclass 130.1.

2. The inventions are distinct, each from the other because of the following reasons:

The methods of Inventions II-VI differ in the method objectives, method steps and parameters and in the reagents used. Invention II recites a method of detecting PSCA; Invention III recites a method of monitoring the course of a cancer; Invention IV recites a method of diagnosing a cancer; Invention V recite a method of inhibiting a cell and

Invention VI recites a method of inhibiting the growth of a tumor cell. The examination of all groups would require different searches in the U.S. PATENT shoes and the scientific literature and would require the consideration of different patentability issues. Thus Inventions II-VI are separate and distinct in having different method objectives, method steps and parameters and in the reagents used and are patentably distinct.

Inventions I and II-VI are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the antibody of Group I can be used in a materially different method such as to purify the antigen in addition to any one of the materially different methods of Groups II-VI.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter and different classifications, restriction for examination purposes as indicated is proper.

This application contains claims directed to the following patentably distinct species of the claimed invention:

If Group II is elected applicant is required to elect a species from

Species A bone

Species B bone marrow

Species C bladder tissue

Species D prostate tissue

Species E colon cells

Species F pancreatic neuroendocrine cells

If Group III or IV is elected applicant is required to elect a species from

Species G prostate cancer

Species H bladder carcinoma

Species I bone metastasis of prostate cancer

The species listed as A-I are distinct in that each tissue or cancer has distinct cell morphology and each cancer is distinct in its origin and form and art on one cell or cancer would not necessarily be art on another.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

4. During a telephone conversation with Ms Adiano on 5/28/02, 6/13/02, and 6/27/02 a provisional election was made on 6/27/02 without traverse to prosecute the invention of Group I, claims 1, 53-63, 87-88. Affirmation of this election must be made by applicant in replying to this Office action. Claims 64-86 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

6. Claims 1, 53-63, 87-88 are under examination.

7. Claims 64-86 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected inventions. Election was made **without** traverse above.

Specification

8. The disclosure is objected to because of the following informalities:

a. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed, for example, Monoclonal antibodies to prostate stem cell antigen.

b. The Brief Description of the Drawings, pages 6-18, is incomplete as it lacks a separate description for the Figures (for example Figure 1 should be Figure 1A and 1B. The Brief Description of the Drawings need to be amended so that Figures recite separate descriptions for each view that match the labels for the Drawings. Also any reference to the figures in the specification needs to be amended accordingly.

c. The address of the ATCC on page 28, line 3 needs to be updated. The new address is: 10801 University Boulevard, Manassas, VA 20110-2209.

d. The specification should be updated to include all SEQ ID Nos for all sequences in the specification. For example those listed on page 30, line 26 and those contained in the figures and described in the Brief Description of the drawings.

Appropriate correction is required.

Sequence Requirements

9. It is noted that the sequence listing in the parent application 09/564,329 was transferred to this application and the sequences listed in the parent application was used for a search of the instant application. The paper copy of the sequence listing submitted with the request to transfer the sequences from the parent to the instant application (paper # 3) is not identical to the computer readable form in the parent application. It is noted that the comments, for example line 213 of the paper copy states "homo sapiens" and in the computer readable form states at line 213 "human PSCA (hPSCA). Although the sequences in both the paper copy and the CRF are identical the descriptions are not. It is requested that a proper paper copy that is identical to the CRF be supplied with the next response. As such included in this Office Action is a Notice to Comply with Sequences.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 53-63 and 87-88 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claim 58 is indefinite for reciting "a cell that produces the monoclonal antibody" because the exact meaning of the phrase is not clear. Claim 58 recites the limitation " a cell that produces the monoclonal antibody " in claim 53. There is insufficient antecedent basis for this limitation in the claim. In addition claim 53 does not recite that the antibody is a monoclonal antibody.

b. The phrase "competes for binding" in claim 53 is a relative phrase which renders the claim indefinite. The phrase "competes for binding" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not readily now what the meets and bounds of the phrase is.

12. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

13. Claims 1 and 87 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claim recites an antibody which specifically binds to PSCA and pharmaceutical compositions comprising such. The specification teaches the human PSCA protein (SEQ ID NO:2) and the murine PSCA protein (SEQ ID NO:4). The specification describes the PSCA protein as "includes all naturally occurring allelic variants, isoforms, and precursors of human" and murine PSCA (see page 20-21).

The general knowledge in the art concerning variants does not provide any indication of how the structure of one variant is representative of unknown variants. Reiger et al. (Glossary of Genetics and Cytogenetics, Classical and Molecular, 4th Ed., Springer-Verlay, Berlin, 1976) clearly define alleles as one of two or more alternative forms of a gene occupying the same locus on a particular chromosome... and differing from other alleles of that locus at one or more mutational sites (page 17). Thus, the structure of naturally occurring allelic sequences are not defined. With the exception of SEQ ID NO:2 and 4 the skilled artisan cannot envision the detailed structure of the encompassed polypeptides and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. The specification fails to provide any teachings as to how the structure of this protein relates or contributes to its function/activity. Since the disclosure fails to describe the common attributes or characteristics that identify members of the genus, and because the genus is highly variant, the disclosure of two sequences is insufficient to describe the genus.

One of skill in the art would reasonably conclude that the disclosure fails to provide a representative number of species to describe the genus as broadly claimed

and one skilled in the art can reasonably conclude that applicant did not have possession of the claimed invention at the time of filing. It is not at all clear that the two species disclosed in the specification would be considured a representative number of species of all PSCA proteins by one of skill in the art. Thus, one of skill in the art would not understand that the applicant had possession of the claimed invention at the time the instant application was filed.

14. Claims 53-63 and 87-88 are rejected under 35 U.S.C. § 112, first paragraph, because the specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention, because the specification does not provide evidence that the claimed biological materials are (1) known and readily available to the public; (2) reproducible from the written description.

It is unclear if a cell line which produces an antibody having the exact chemical identity of HB-12612, HB-12613, HB-12614, HB-12615, HB-12616, HB-12617, and HB-12618 are known and publicly available, or can be reproducibly isolated without undue experimentation. Therefore, a suitable deposit for patent purposes is suggested. Without a publicly available deposit of the above cell line, one of ordinary skill in the art could not be assured of the ability to practice the invention as claimed. Exact replication of: (1) the claimed cell line; (2) a cell line which produces the chemically and functionally distinct antibody claimed; and/or (3) the claimed antibody's amino acid or nucleic acid sequence is an unpredictable event.

For example, very different V_H chains (about 50% homologous) can combine with the same V_K chain to produce antibody-binding sites with nearly the same size, shape, antigen specificity, and affinity. A similar phenomenon can also occur when different V_H sequences combine with different V_K sequences to produce antibodies with very similar properties. The results indicate that divergent variable region sequences, both in and out of the complementarity-determining regions, can be folded to form similar binding site contours, which result in similar immunochemical characteristics. [FUNDAMENTAL IMMUNOLOGY 242 (William E. Paul, M.D. ed., 3d ed. 1993)]. Therefore, it would require undue experimentation to reproduce the claimed antibody species. Deposit of the hybridoma would satisfy the enablement requirements of 35 U.S.C. § 112, first paragraph. See, 37 C.F.R. 1.801-1.809.

Applicant's referral to the deposit on page 27-28 of the specification is an insufficient assurance that the required deposit has been made and all the conditions of 37 CFR 1.801-1.809 met. If the deposit is not made under the provisions of the Budapest Treaty, then in order to certify that the deposits comply with the criteria set forth in 37 CFR 1.801-1.809 regarding availability and permanency of deposits, assurance of compliance is required. Such assurance may be in the form of an affidavit or declaration by applicants or assignees or in the form of a statement by an attorney of record who has the authority and control over the conditions of deposit over his or her signature and registration number averring:

(a) during the pendency of this application, access to the deposits will be afforded to the Commissioner upon request:

(b) all restrictions upon the availability to the public of the deposited biological material will be irrevocably removed upon the granting of a patent on this application:

(c) the deposits will be maintained in a public depository for a period of at least thirty years from the date of deposit or for the enforceable life of the patent of or for a period of five years after the date of the most recent request for the furnishing of a sample of the deposited biological material, whichever is longest; and

(d) the deposits will be replaced if they should become nonviable or non-replicable.

Amendment of the specification to recite the complete name and address of the depository is required. As an additional means for completing the record, applicant may submit a copy of the contract with the depository for deposit and maintenance of each deposit.

If a deposit is made after the effective filing date of the application for patent in the United States, a verified statement is required from a person in a position to corroborate that the biological material described in the specification as filed is the same as that deposited in the depository, stating that the deposited material is identical to the biological material described in the specification and was in the applicant's possession at the time the application was filed.

Applicant's attention is directed to In re Lundak, 773 F.2d. 1216, 227 USPQ 90 (CAFC 1985) and 37 CFR 1.801-1.809 for further information concerning deposit practice.

15. Claims 53-63, 88 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an antibody that competes for binding to the same epitope as antibody 1G8, 2H9, 3C5, 3E6, or 4A10, with successful completion of the deposit requirements, wherein the antibody is a polyclonal, monoclonal, chimeric, a cell producing such antibodies, antigen binding fragments of such, immunoconjugates of such, pharmaceutical compositions comprising such that the antibodies bind SEQ ID NO:2 and kits comprising such antibodies, does not reasonably provide enablement for any antibody that competes for binding to the same epitope as 2A2 or 3G3 or any cell producing such or any pharmaceutical compositions comprising such or any kits comprising such antibodies. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Factors to be considered in determining whether undue experimentation is required, are summarized in Ex parte Forman, 230 USPQ 546 (BPAI 1986). They include the nature of the invention, the state of the prior art, the relative skill of those in the art, the amount of direction or guidance disclosed in the specification, the presence or absence of working examples, the predictability or unpredictability of the art, the breadth of the claims, and the quantity of experimentation which would be required in order to practice the invention as claimed.

The claims are broadly drawn to an antibody that competes for the binding to the same epitope as 2A2 and 3G3 and pharmaceutical compositions comprising such. The

specification teaches the epitope mapping of antibodies 4A10, 2H9, 3C5, 1G8, 3E6. The specification does not teach the epitopes to which antibodies 2A2 and 3g3 bind.

As taught in Greenspan et al (Nature Biotechnology 7:936-937 (1999)) defining epitopes is not as easy as it seems (page 937). Epitopes have been defined in terms of the spatial organization of residues that make contact with a ligand and the structural characterization of the molecular interface for the binding of the molecules to define the epitope boundaries (page 937 middle of page). The epitope defined in this manner will likely include residues that contact the ligand but are energetically neutral or even destabilizing to binding. "In addition, a priori it will not include any residue that makes no contact with a ligand but whose substitution may profoundly effect ligand recognition through influence on the stability of the free form of the macromolecule, or participation in long-range allosteric effects". "Even when the residues making contacts with ligands are known with certainty, say from the crystal structure of the complex, the question remains with regard to the energetic involvement of each residue (page 936 right column, first paragraph). Therefore, "amino acids should be recognized to have multiple ways of contributing to a noncovalent interaction" (page 937, middle of page). As evidenced by Greenspan et al a number of factors not primarily related to the contours of the contacts of the molecules contribute to the free energy change, sometimes profoundly.

Therefore, in view of the lack of predictability in the art as evidenced by Greenspan et al, and the lack of guidance in the specification, one of skill in the art

would be required to perform undue experimentation in order to practice the claimed invention.

Priority

16. Claim 53 recites the limitation of an antibody that competes for binding to the 2A2 antibody. The limitation of the 2A2 antibody is first seen in application 09/203939. therefore claims 53-63, and 87-88 are granted the priority date of 12/98. Claim 1 recites the limitation of 'internalized". This limitation is first seen in 09/251835, thus, claim 1 is granted the priority date of 2/99.

Double Patenting

17. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

18. Claims 1, 53-63, 87-88 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3,

69-86 of copending Application No. 09/359,326. Although the conflicting claims are not identical, they are not patentably distinct from each other. The claims in 09/359,326 are not patentably distinct from those in the instant application because the antibodies listed in claim 53 of the instant application bind to regions defined in claims 1-3 of 09/359,326. In addition it would be obvious to obtain other antibodies that bind to the regions defined in claims 1-3 which are the epitopes which are bound by the antibodies recited in claim 53 of the instant application. It would also be obvious to place the antibody in a kit for ease and convenience as is customary in the art.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1, 53-63, 87-88 are directed to an invention not patentably distinct from claims 1-3, 69-86 of commonly assigned 09/359,326. Specifically, see above.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP § 2302). Commonly assigned 09/359,326, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee is required under 37 CFR 1.78(c) and 35 U.S.C. 132 to either show that the conflicting inventions were commonly owned at the time the invention in this application was made or to name the prior inventor of the

conflicting subject matter. Failure to comply with this requirement will result in a holding of abandonment of the application.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications filed on or after November 29, 1999.

19. Claims 1, 53-63, 87-88 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3 of U.S. Patent No. 6,258,939 and further in view of Vitetta et al (Biologic therapy of Cancer, J.B. Lippincott Company, pages 482-495, 1991) and Queen et al (U.S. Patent 5,693,762, filed 6/95). Although the conflicting claims are not identical, they are not patentably distinct from each other. The claims in the instant application are broader in scope than those in the patent and are directed to immunoconjugates and humanized antibodies. The claims in the patent are directed to monoclonal antibodies 1G8, 2A2, 2H9, 3C5, 3E6, 3G3, and 4A10 recited in claim 53 of the instant application and to hybridoma cells producing the antibodies. The clams in the instant application are directed to antibodies that compete for binding to the same epitopes as those of 1G8, 2A2, 2H9, 3C5, 3E6, 3G3, and 4A10. the claims in the patent do not exemplify immunoconjugates or humanized antibodies. Theses deficiencies are made up for in the teachings of Vitetta and Queen et al. It would have been obvious to produce other antibodies that bind the

same epitope as those of 1G8, 2A2, 2H9, 3C5, 3E6, 3G3, and 4A10 in order to have other antibodies for competition assays and the like. In addition, it would have been obvious to one of ordinary skill in the art to produce immunoconjugates because Vitetta teach ITs have been used successfully in cancer therapy. In addition it would have been obvious to one of skill in the art to humanize the antibodies because Queen et al teach methods to overcome a HAMA response and it is customary to humanize antibodies for human therapy. In addition, it would be obvious to place the antibody in a kit for convenience and ease of manipulation and assay procedures.

Claims 1, 53-63, 87-88 are directed to an invention not patentably distinct from claims 1-3 of commonly assigned 6,258939. Specifically, see above.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP § 2302). Commonly assigned 6,258,939, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee is required under 37 CFR 1.78(c) and 35 U.S.C. 132 to either show that the conflicting inventions were commonly owned at the time the invention in this application was made or to name the prior inventor of the conflicting subject matter. Failure to comply with this requirement will result in a holding of abandonment of the application.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications filed on or after November 29, 1999.

Claim Rejections - 35 USC § 102

20. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in-
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

21. Claims 1, 53-60, 87 are rejected under 35 U.S.C. 102(e) as being anticipated by Au-Young (U.S. Patent 5,856,136, filed 7/96).

The claims recite an antibody that binds to PSCA on carcinoma cells and is internalized and an antibody that competes for binding to the same epitope as 1G8, 2A2, 2H9, 3c5, 3E6, 3G3, or 4A10, wherein the antibody is a polyclonal, monoclonal, humanized, a cell producing such antibody, a Fab, pharmaceutical compositions comprising such. For this rejection the intended use of the composition of claim 87 for use in killing human cells is given no patentable weight.

Au-Young teach a protein that is identical to SEQ ID NO:2, PSCA except for one amino acid at position 49 (see SEQ ID NO:2 of Au-young). Au-Young teach monoclonal, polyclonal, chimeric, and antigen binding fragments and single chain antibodies to SEQ ID NO:2 (see column 13-14). The antibodies can be labeled and pharmaceutical compositions comprising the antibodies (see column 20, lines 46-50). Since the polyclonal antibodies would bind to many epitopes of SEQ ID NO:2, PSCA, it would be inherent that the polyclonal serum comprise antibodies that would internalize thus meeting the limitation of claim 1. Because of the indefinite nature of the phrase "competes for binding" at high concentrations any antibody to SEQ ID NO:2 would compete for binding, thus the limitation of claim 53 has been met by the art of Au-Young.

22. Claims 1, 53, 55, and 87 are rejected under 35 U.S.C. 102(a) as being anticipated by Reiter et al (PNAS 95:1735-40, 2/98).

The claims have been described supra. For this rejection the intended use of the composition of claim 87 for use in killing human cells is given no patentable weight.

Reiter et al teach a polyclonal antibody that binds to residues 50-64 of SEQ ID NO:2, PSCA and compositions comprising such (see page 1736). Since the polyclonal antibodies would bind to many epitopes of PSCA of residues 50-64, it would be inherent that the polyclonal serum comprise antibodies that would internalize thus meeting the limitation of claim 1. Because of the indefinite nature of the phrase "competes for

binding" at high concentrations the polyclonal antibodies would compete for binding, thus the limitation of claim 53 has been met by the art of Reiter et al.

23. Claims 1, 53-63, 87 are rejected under 35 U.S.C. 102(a) as being anticipated by Reiter et al (WO 98/40403, published 9/1998).

Claims 1, 53-60 and 87 have been described supra. Claims 61-63 recite an immunoconjugate comprising a cytotoxic agent of PE. For this rejection the intended use of the composition of claim 87 for use in killing human cells is given no patentable weight.

Reiter et al teach polyclonal, monoclonal, chimeric, and recombinant antigen binding fragments of antibodies to SEQ ID NO:2, PSCA and immunoconjugated comprising the antibody and PE (see page 13). Reiter et al teach the antibodies bind to distinct epitopes and epitope mapping for antibodies recited in claim 53 (see page 13, 35-37) and pharmaceutical compositions comprising such. Since the polyclonal antibodies would bind to many epitopes of PSCA of residues 50-64, it would be inherent that the polyclonal serum comprise antibodies that would internalize thus meeting the limitation of claim.1. Because Reiter teach the same antibodies recited in claim 53, the antibodies of Reiter would compete for binding to those recited in claim 53.

Claim Rejections - 35 USC § 103

24. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

25. Claims 1, 53-63, 87-88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Au-young (U.S. Patent 5,856,136, filed 7/96) as applied to claims 1, 53-60, 87 above, and further in view of Vitetta et al (Biologic Therapy of Cancer, J.B. Lippincott Company, page 482-495, 1991).

Claims 1, 53-63, 87 have been described supra. Claim 88 recites a kit comprising an antibody and a label. For this rejection the intended use of the composition of claim 87 for use in killing human cells is given no patentable weight.

Au-Young has been described supra. Au-Young does not teach an immunoconjugate comprising a cytotoxic agent of PE or a kit comprising an antibody. These deficiencies are made up for in the teachings of Vitetta et al.

Vitetta et al teach immunoconjugates comprising an antibody or antigen binding fragments thereof and PE (see page 483).

It would have been prima facie obvious to one of ordinary skill in the art at the time the claimed invention was made to have produced immunoconjugates of the antibodies of Au-Young directed to SEQ ID NO:2 in view of Vitetta et al.

One of ordinary skill in the art would have been motivated to and had a reasonable expectation of success to have produced immunoconjugates of the antibodies of Au-Young directed to SEQ ID NO:2 in view of Vitetta et al because Au-young teach SEQ ID NO:2 is present in bladder tumors (see column 4, lines 29-30) and because Vitetta et al teach that immunotoxins have been used successfully in tumor therapy (see page 489-492). Thus, it would have been obvious to target SEQ ID NO:2 which is found in bladder cancer as taught by Au-Young with an immunoconjugate of a cytotoxin as taught by Vitetta for treating cancer.

Claim 88 recites a kit comprising an antibody and a detectable label. Although the claim recites a kit, no positive recitation of the kit ingredients/elements distinguishes the claim over the references. Therefore, the references read on the claimed kit.

Further, it is a well-known convention in the art to place the recited elements in a kit for the advantages of convenience and economy, and methods of detectably labeling antibodies also were well known and available to the ordinarily skilled artisan.

Thus, the claimed subject matter is considered obvious over the prior art, absent sufficient factual evidence to the contrary.

Therefore, the invention as a whole was prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references.

26. Claims 1, 53, 55, 60, 61, 63, 87-88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reiter et al (PNAS 95:1735-1740, 2/98) as applied to claim1, 53, 55, 87 above, and further in view of Vitetta et al (Biologic Therapy of Cancer, J.B. Lippincott Company, page 482-495, 1991) and Thomas et al (Antibodies Volume II, A practical approach, IRL Press, pages 223-245, 1989).

The claims have been described supra. For this rejection the intended use of the composition of claim 87 for use in killing human cells is given no patentable weight.

Reiter et al has been described supra. Reiter et al does not teach immunoconjugates, labeled antibodies, or a kit comprising such. These deficiencies are made up for in the teachings of Vitetta et al and Thomas et al.

Vitetta et al has been described supra.

Thomas et al teach conjugates of antibodies and antibody fragments comprising labels.

It would have been prima facie obvious to one of ordinary skill in the art at the time the claimed invention was made to have produced immunoconjugates of the antibodies of Reiter et al directed to SEQ ID NO:2 in view of Vitetta et al and Thomas et al.

One of ordinary skill in the art would have been motivated to and had a reasonable expectation of success to have produced immunoconjugates of the antibodies of Reiter et al directed to SEQ ID NO:2 in view of Vitetta et al and Thomas et al because Reiter et al teach SEQ ID NO:2 (PSCA) is present in prostate tumors and because Vitetta et al teach that immunotoxins have been used successfully in tumor therapy (see page 489-492) and Thomas et al teach immunoconjugates are used in cancer therapy and diagnosis (see page 223). Thus, it would have been obvious to target SEQ ID NO:2 which is found in prostate cancer as taught by Reiter et al with an immunoconjugate of a cytotoxin as taught by Vitetta et al for treating cancer or a labeled antibody for detection as taught by Thomas et al.

Claim 88 recites a kit comprising an antibody and a detectable label. Although the claim recites a kit, no positive recitation of the kit ingredients/elements distinguishes the claim over the references. Therefore, the references read on the claimed kit. Further, it is a well-known convention in the art to place the recited elements in a kit for the advantages of convenience and economy, and methods of detectably labeling antibodies also were well known and available to the ordinarily skilled artisan.

Thus, the claimed subject matter is considered obvious over the prior art, absent sufficient factual evidence to the contrary.

Therefore, the invention as a whole was prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references.

27. Claims 1, 53-63, 87-88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reiter et al (WO 98/40403, published 9/98).

The claims have been described supra. For this rejection the intended use of the composition of claim 87 for use in killing human cells is given no patentable weight.

Reiter et al has been described supra. Reiter et al does not exemplify a kit comprising the antibody and a detectable label but this is obvious and common in the art.

Claim 88 recites a kit comprising an antibody and a detectable label. Although the claim recites a kit, no positive recitation of the kit ingredients/elements distinguishes the claim over the references. Therefore, the references read on the claimed kit. Further, it is a well-known convention in the art to place the recited elements in a kit for the advantages of convenience and economy, and methods of detectably labeling antibodies also were well known and available to the ordinarily skilled artisan.

Thus, the claimed subject matter is considered obvious over the prior art, absent sufficient factual evidence to the contrary.

Therefore, the invention as a whole was prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references.

Conclusion

28. No claim is allowed.

29. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Larry R. Helms, Ph.D, whose telephone number is (703) 306-5879. The examiner can normally be reached on Monday through Friday from 7:00 am to 4:30 pm, with alternate Fridays off. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Caputa, can be reached on (703) 308-3995. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

30. Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CM1 Fax Center telephone number is (703) 308-4242.

Respectfully,

Larry R. Helms Ph.D.

703-306-5879